

Listing of the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

1. (Currently Amended) A tissue puncture closure device for partial insertion into and sealing of an internal tissue wall puncture, comprising:

a carrier tube;

a filament;

an anchor for insertion through the tissue puncture, the anchor being attached to the filament at a first end of the closure device;

a sealing plug ~~disposed proximal of the anchor, the sealing plug being~~ positioned in the carrier tube;

~~wherein the sealing plug comprises a shape that when open has a higher surface area to volume ratio than an open rectangle~~

wherein the filament passes from a first hole in the sealing plug to a hole in the anchor and back through a second hole in the sealing plug.

2. (Currently Amended) A tissue puncture closure device for partial insertion into and sealing of an internal tissue wall puncture according to claim 1 wherein the sealing plug ~~shape comprises at least two folds~~ is folded at least twice.

3. (Currently Amended) A tissue puncture closure device for partial insertion into and sealing of an internal tissue wall puncture according to claim 2 wherein the ~~at least two folds~~ comprise an S-fold sealing plug is shaped at least approximately like an S.

4. (Currently Amended) A tissue puncture closure device for partial insertion into and sealing of an internal tissue wall puncture according to claim 1 wherein the sealing plug is ~~folded latitudinally to form a generally rectangular shape~~ is folded.

5. (Currently Amended) A tissue puncture closure device for partial insertion into and sealing of an internal tissue wall puncture according to claim 4 wherein the sealing plug is folded between the first hole in the sealing plug ~~is folded latitudinally a single time at an approximate center of~~ and the second hole in the sealing plug.

6. (Currently Amended) A tissue puncture closure device for partial insertion into and sealing of an internal tissue wall puncture according to ~~claim 5~~ claim 1 wherein the sealing plug comprises:

a first plurality of holes including the first hole in the sealing plug, the first plurality of holes forming a first filament weave pattern in a first portion of the sealing plug, wherein a first portion of the filament extending extends from a first side of the anchor loops and passes through each one of the first filament weave pattern plurality of holes;

a second plurality of holes including the second hole in the sealing plug, the second plurality of holes forming a second filament weave pattern in a second portion of the sealing

plug, wherein a second portion of the filament ~~extending~~ extends from a second side of the anchor ~~loops~~ and passes through each one of the second ~~filament weave pattern~~ plurality of holes.

7. (Currently Amended) A tissue puncture closure device for partial insertion into and sealing of an internal tissue wall puncture according to claim 6 wherein the first weave pattern and the second ~~filament~~ weave ~~patterns~~ pattern each comprise a five-hole zigzag arrangement.

8. (Currently Amended) A tissue puncture closure device for partial insertion into and sealing of an internal tissue wall puncture according to ~~claim 7~~ claim 1 wherein the sealing plug and filament ~~comprises~~ each comprise biologically resorbable materials.

9. (Currently Amended) A tissue puncture closure device for partial insertion into and sealing of an internal tissue wall puncture according to claim 6 wherein the sealing plug is folded between the first weave pattern and the second ~~filament~~ weave ~~patterns are disposed in opposing legs of a V-shape pattern~~.

10. (Original) A tissue puncture closure device for partial insertion into and sealing of an internal tissue wall puncture according to claim 1 wherein the sealing plug shape comprises an X-shape in cross-section.

11. (Currently Amended) A tissue puncture closure device for partial insertion into and sealing of an internal tissue wall puncture according to claim 10, further comprising a plurality of holes including the first hole in the sealing plug and the second hole in the sealing plug, the plurality of holes forming a staggered filament ~~weave pattern~~ in the sealing plug.

12. (Currently Amended) A tissue puncture closure device for partial insertion into and sealing of an internal tissue wall puncture according to ~~claim 11~~ claim 10 wherein ~~the staggered filament weave pattern comprises alternately passing the filament~~ alternately passes through generally perpendicular walls of the sealing plug.

13. (Currently Amended) A tissue puncture closure device for partial insertion into and sealing of an internal tissue wall puncture according to claim 12 wherein the ~~staggered weave pattern comprises~~ plurality of holes includes a first set of equally longitudinally spaced hole pairs in ~~a first one~~ of the perpendicular wall walls and a second set of equally longitudinally spaced hole pairs in ~~a second~~ another one of the perpendicular walls, the second set of hole pairs ~~being~~ staggered from the first set of hole pairs longitudinally.

14. (Currently Amended) A tissue puncture closure device for partial insertion into and sealing of an internal tissue wall puncture according to claim 1 wherein the sealing plug shape comprises two components, ~~each of the two components folded into a generally U-shape and interconnected with the other~~ and wherein the first hole in the sealing plug is in one of the two components and the second hole in the sealing plug is in another one of the two components.

15. (Currently Amended) A tissue puncture sealing device, comprising:

an internal component configured to be positioned against an internal wall of a bodily lumen;

an external component configured to be positioned external to the lumen, the external component being folded so that one portion of the external component is in contact with another portion of the external component;

wherein the external component is operatively connected to the internal component by a filament configured to compress and hold the internal and external components together to prevent fluid from passing through a puncture in the bodily lumen;

wherein the filament passes from a first hole in the external component to a hole in the internal component and back through a second hole in the external component, the external component being folded between the first hole in the external component and the second hole in the external component; and

wherein the tissue puncture sealing device is in an undeployed configuration.

16. (Previously Presented) A tissue puncture sealing device according to claim 15 wherein the internal component is a stiff anchor and the external component is a collagen sponge.

17. (Original) A tissue puncture sealing device according to claim 16 wherein the collagen sponge is folded twice longitudinally.

18. (Original) A tissue puncture sealing device according to claim 17 wherein the collagen sponge is substantially S-shaped.

19. (Currently Amended) A tissue puncture sealing device according to claim 15 wherein the external component comprises a ~~filament~~ plurality of holes including the first hole in the external component and the second hole in the external component, wherein the plurality of holes form a weave pattern, and wherein the filament weaves through a first portion of the ~~filament~~ weave pattern, through the internal component, and back through a second portion of the ~~filament~~ weave pattern.

20. (Currently Amended) A tissue puncture sealing device according to claim 19 wherein the ~~filament weaves through the internal component at approximately a middle of the external component~~ external component is folded between the first portion of the weave pattern and the second portion of the weave pattern.

21. (Currently Amended) A tissue puncture sealing device according to ~~claim 19~~ claim 15 wherein the ~~first and second portions of the~~ external component comprises two legs of a ~~general V-shape~~ folded along a centerline such that the two legs are substantially aligned.

22. (Previously Presented) A tissue puncture sealing device according to claim 19 wherein the external component is folded latitudinally.

23. (Currently Amended) A tissue puncture sealing device according to claim 15, wherein the external component ~~is~~ includes a first external component and ~~the tissue puncture sealing device further comprises~~ a second external component, the second external component being folded and engaged in contact with the first external component.

24. (Original) A tissue puncture sealing device according to claim 23 wherein the first and second external components are each folded into generally U-shapes.

25. (Currently Amended) An internal tissue puncture closure device, comprising:
an anchor for insertion through a tissue puncture;
a filament threaded through the anchor;
a flexible sealing plug attached to the anchor by the filament;
wherein the sealing plug comprises two cross members each of which includes a plurality of holes which extend therethrough; and
wherein the filament extends through the plurality of holes in each of the two cross members.

26. (Previously Presented) An internal tissue puncture closure device according to claim 25 wherein the two cross members are arranged in a generally X-shape, and wherein the filament alternately extends through the plurality of holes in the two cross members in a spiral pattern.

27. (Original) An internal tissue puncture closure device according to claim 26 wherein each of two portions of the filament extending from the anchor in opposite directions traverse separate holes through the two cross members.

28. (Currently Amended) A tissue puncture sealing device, comprising:
a filament;
an anchor attached to the filament and configured to be inserted through a tissue wall puncture; and
a flexible sealing plug disposed proximal of the anchor, the flexible sealing plug including a first plurality of openings and a second plurality of openings;
wherein the filament passes through at least two openings from the first plurality of openings, through the anchor, and back through at least two openings from the second plurality of openings.

29. (Currently Amended) A tissue puncture sealing device according to claim 28 wherein the flexible sealing plug is folded ~~latitudinally within the sealing device~~ and the tissue puncture sealing device is in an undeployed configuration.

30. (Currently Amended) A tissue puncture sealing device according to claim 28 wherein the flexible sealing plug has two legs that form an at least approximately ~~V-shape~~ symmetrical shape, and wherein the first plurality of openings are in one leg ~~of the V-shape~~ and the second plurality of openings are in another leg ~~of the V-shape~~.

31. (Currently Amended) A tissue puncture closure device for partial insertion into and sealing of an internal tissue wall puncture, comprising:

a carrier tube having first and second ends;

an anchor disposed outside of the carrier tube at the first end thereof;

a sealing plug disposed inside the carrier tube at the first end thereof;

wherein the sealing plug is folded at least once; and

wherein the tissue puncture closure device is in an undeployed configuration where the tissue puncture closure device is not inserted into a patient's tissue or into an introducer in the patient's tissue.

32. (Original) A tissue puncture closure device for partial insertion into and sealing of an internal tissue wall puncture according to claim 31 wherein the sealing plug is tri-folded into an S-shape as seen from an end view.

33. (Original) A tissue puncture closure device for partial insertion into and sealing of an internal tissue wall puncture according to claim 31 wherein the sealing plug is folded from an original V-shape to a rectangular shape.

34-36. (Cancelled)

37. (Currently Amended) A method of sealing an internal tissue puncture, comprising:

inserting a closure device partially into the internal tissue puncture, the closure device including an anchor and a sealing plug, the closure device being in an undeployed configuration ~~and including an anchor and a sealing plug~~, before being inserted into the internal tissue puncture or an insertion sheath that extends into the internal tissue puncture where, in the undeployed configuration, the sealing plug ~~being~~ is folded so that one portion of the sealing plug is in contact with another portion of the sealing plug.

deploying the anchor;

filling the internal tissue puncture with the sealing plug;

compressing the sealing plug and the anchor across the internal tissue puncture.

38. (Original) A method of sealing an internal tissue puncture according to claim 37, further comprising inserting the closure device into an insertion sheath.

39. (Previously Presented) A method of sealing an internal tissue puncture according to claim 37 wherein the sealing plug has a V-shape when it is unfolded.

40. (Previously Presented) A method of sealing an internal tissue puncture according to claim 37 wherein the sealing plug is folded latitudinally.

41. (Cancelled)

42. (Currently Amended) A tissue puncture closure device for partial insertion into and sealing of an internal tissue wall puncture, comprising:

a carrier tube;

an anchor;

a sealing plug disposed inside the carrier tube; and

a filament configured to couple the anchor and the sealing plug together;

wherein the sealing plug is folded at least once so that one portion of the sealing plug is in contact with another portion of the sealing ~~plug~~ plug;

wherein the tissue puncture closure device is in an undeployed configuration where the tissue puncture closure device is not inserted into a patient's tissue or into an introducer in the patient's tissue.

43. (Currently Amended) A tissue puncture closure device, comprising:

an anchor for insertion through a tissue puncture;

a sealing plug that is flexible; and

a filament configured to couple the anchor and the sealing plug together, the sealing plug being configured to change shape upon being coupled to the anchor with the filament;

wherein the sealing plug is generally X-shaped in cross section.

44. (Previously Presented) The tissue puncture closure device of claim 43 wherein the sealing plug comprises two cross members which form the X-shaped sealing plug, and

wherein the filament alternately extends through holes in the two cross members in a spiral pattern.

45. (Currently Amended) A tissue puncture closure device for partial insertion into and sealing of an internal tissue wall puncture, comprising:

a filament;

an anchor; and

a sealing plug ~~being~~ that is generally V-shaped when the sealing plug is open and laid out flat;

wherein the tissue puncture closure device is in an undeployed configuration.

46. (Previously Presented) The tissue puncture closure device of claim 45 wherein the sealing plug is folded at least once.

47. (New) A tissue puncture closure device, comprising:

a carrier tube;

an anchor configured to be inserted through a tissue puncture;

a sealing plug; and

a filament configured to couple the anchor and the sealing plug together;

wherein the filament passes through a first hole in the sealing plug, through a hole in the anchor, and back through a second hole in the sealing plug, in that order; and

wherein the sealing plug is positioned in the carrier tube in an undeployed configuration.

48. (New) The tissue puncture closure device of claim 47 wherein the sealing plug comprises a first plurality of holes including the first hole in the sealing plug and a second plurality of holes including the second hole in the sealing plug, and wherein the filament passes through each one of the first plurality of holes, through the hole in the anchor, and back through each one of the second plurality of holes.

49. (New) The tissue puncture closure device of claim 47 wherein the sealing plug is folded.

50. (New) The tissue puncture closure device of claim 47 wherein the sealing plug is folded between the first hole in the sealing plug and the second hole in the sealing plug.

51. (New) The tissue puncture closure device of claim 47 wherein the sealing plug includes at least two portions that are symmetrical and are folded together, the sealing plug comprising a first plurality of holes in one of the at least two symmetrical portions and a second plurality of holes in another one of the at least two symmetrical portions, the first plurality of holes including the first hole and the second plurality of holes including the second hole, and wherein the filament is positioned to extend through each one of the first plurality of holes in the one symmetrical portion, through the hole in the anchor, and back through each one of the second plurality of holes in the another symmetrical portion.

52. (New) The tissue puncture closure device of claim 47 wherein the tissue puncture closure device is a vascular puncture closure device, wherein the anchor is configured to be inserted through an opening in a blood vessel and the sealing plug is configured to be positioned opposite the anchor outside of the blood vessel, and wherein the filament is configured to couple the anchor and the sealing plug together across the opening in the blood vessel.